



US 20120032886A1

(19) **United States**(12) **Patent Application Publication**
Ciesla et al.(10) **Pub. No.: US 2012/0032886 A1**(43) **Pub. Date: Feb. 9, 2012**(54) **METHOD FOR ASSISTING USER INPUT TO A DEVICE**(52) **U.S. Cl. 345/168**(76) Inventors: **Craig Michael Ciesla**, Mountain View, CA (US); **Micah B. Yairi**, Daly City, CA (US); **Nathaniel Mark Saal**, Palo Alto, CA (US)(21) Appl. No.: **13/024,241**(22) Filed: **Feb. 9, 2011****Related U.S. Application Data**

(60) Provisional application No. 61/303,214, filed on Feb. 10, 2010.

Publication Classification(51) **Int. Cl.**
G08B 6/00 (2006.01)
G06F 3/02 (2006.01)(57) **ABSTRACT**

A method for assisting user input to a device, comprising the steps of providing a user interface to retrieve a user input, providing a tactile interface layer that defines a surface and includes a volume of fluid and a displacement device that manipulates the volume of fluid to deform a plurality of particular regions of the surface into tactilely distinguishable formations that each represent a key of a key interface, allowing the user to provide input through the key interface, predicting a subsequent key input when a user provides an input through the key interface, and manipulating the volume of fluid to deform the plurality of particular regions into one of two types of tactilely distinguishable formations: a first type for tactilely distinguishable formations that represent a predicted key and a second type for tactilely distinguishable formations that represent an unpredicted key.

